

## PROCEEDINGS OF LEARNED SOCIETIES.

## GEOLOGICAL SOCIETY.

November 20th, 1901.—J. J. H. Teall, Esq., M.A., V.P.R.S.,  
President, in the Chair.

The following communication was read:—

‘Notes on the Genus *Lichas*.’ By Frederick Richard Cowper  
Reed, Esq., M.A., F.G.S.

The various attempts which have been made to separate this genus into subgeneric groups have not been altogether satisfactory, owing to the difficulty of deciding what are the more important structural features. A natural classification, as opposed to an artificial one, should be based on the structural characters of the head-shield; and the variations in the form and lobation of the glabella in the Lichadidæ (as Beecher has remarked) indicate differences in the relative development of the appendages and organs of the head. The origin and application of the various proposals for classification are considered, and certain synonyms and names of prior application to other organisms are rejected. Next, the characters of the original type-species of the various subgenera are summarized. The second part of the paper contains a critical consideration of the homologies of the furrows and lobes in the glabella of the Lichadidæ. Following Beecher's scheme, the anterior lateral portion of the so-called median or frontal lobe is considered to correspond to the antennular or true first lobe of the glabella. The so-called ‘first’ lateral lobes of *Lichas* would correspond to the fused antennary and mandibular lobes, the true second and third lobes of the glabella. The lateral lobes, which are usually termed the ‘middle’ or ‘second’ lateral lobes, become homologous with the fourth or first maxillary; and the neck or occipital lobe or ring falls into its right place as the second maxillary lobe. By means of this principle an attempt is made to discover the principal lines of modification along which the evolution of the head-shields of the Lichadidæ has proceeded. In the third part of the paper the Lichadidæ are divided into two great groups: (1) that with a pair of bi-composite lateral lobes to the glabella and a more or less definite fourth pair of lateral lobes; and (2) a group with a pair of tri-composite lateral lobes, through the fusion of the fourth pair with the bi-composite pair of the preceding group. Names are proposed for each group, and also, where necessary, for the eight sections, of subgeneric value, into which each group is subdivided. The paper closes with a list of the British members of the family Lichadidæ, to show their distribution among the groups and sections.

December 4th, 1901.—J. J. H. Teall, Esq., M.A., V.P.R.S.,  
President, in the Chair.

The following communication was read:—

‘On a new Genus belonging to the Leperditiaæ, from the Cambrian Shales of Malvern.’ By Prof. Theodore Thomas Groom, M.A., D.Sc., F.G.S.

Forms referred to *Beyrichia* have long been known from the Cambrian beds of Scandinavia, Stockingford, and South Wales; and the writer has obtained from the lowest part of the Malvern Black Shales a species identical with the Stockingford form, which had been provisionally identified with the Swedish *Beyrichia Angelini*. The characters of these specimens serve to separate the species from those now placed under the genus *Beyrichia*, a conclusion in which Prof. T. Rupert Jones concurs. The specimens were obtained from Black Shales at the northern extremity of Chase End Hill, associated with *Acrotreta*, *Agnostus*, *Kutorgina pusilla*, and *Protospongia fenestrata*. The shales are nowhere actually exposed, and can only be reached by excavation. The specimens are frequently crushed and indented. The new genus appears to be most nearly related to those provided with broad lobes, such as *Klædenia*, *Beyrichia*, *Ctenobolina*, and *Tetradella*. Specimens obtained by Prof. Lapworth from the Oldbury Shales below the zone of *Sphærophthalmus alatus* are also referred to the same genus and species. From Linnarsson’s description of *Beyrichia Angelini* it would seem that this form may be related to the new genus, but it clearly belongs to a different species.

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#### MISCELLANEOUS.

*Observations on the Flowering of Lobelia cardinalis and Lobelia syphilitica.* By THOMAS MEEHAN.

IN my garden during the past year, 1900, I had some fifty plants each of *Lobelia syphilitica* and *Lobelia cardinalis* in rows side by side. They were so near each other that some of the flower-stems of the latter fell over and seemed to be blooming among the plants of the former. It surprised me one day to note that while numerous winged insects visited the blue-flowered species, none cared for the scarlet ones. This excited an interest that led to a continuous observation through the whole flowering-period. At no time did I see an insect-visitor on the cardinal flower, while every day the blue-flowered species had abundant attention. On one occasion I found a humming-bird, *Trochilus colubris*, at work on the cardinal flower, and the zest with which numerous flowers were examined by the bird attested to the presence of nectar, a fact which my own test subsequently verified. The bird is not numerous on my ground, and with an abundance of flowers of various kinds over many acres of ground, it may be inferred that it was not a frequent visitor to the cardinal flower. I observed it only on this occasion. It wholly neglected the blue-flowered species, that seemed so attractive to the insects. Toward the end of the season the foreman in charge, Mr. Hemming, captured specimens of all that were visitors to